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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,169	09/11/2003	Robert D. Nuckolls	P-9236	7593
24209 7590 11/19/2007 GUNNISON MCKAY & HODGSON, LLP 1900 GARDEN ROAD SUITE 220 MONTEREY, CA 93940			EXAMINER PAN, DANIEL H	
			ART UNIT 2183	PAPER NUMBER
			MAIL DATE 11/19/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/660,169

Applicant(s)

NUCKOLLS ET AL.

Examiner

Daniel Pan

Art Unit

2183

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05/07/07,09/14/07.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-29 is/are allowed.
- 6) ☒ Claim(s) 30-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

1. Claims 1-44 remain for examination.
2. Claims 30-34, 36-37, 39-40, 42, 44 are rejected under 35 U.S.C. 102(b) as being anticipated by White (5,996,071).
3. Claims 30, 39 have not been changed. Change in claim 33 is directed to language format, and does not affect the scope of the claim.
4. Claims 35, 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over White (5,996,071) in view of Smith (4,370,711).
5. Claim 38, 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over White (5,996,071) in view of Chang (5,687,360).
6. The rejections to claims 30-44 have been maintained and incorporated by reference the last Office action open 02/02/07. However, in view of applicant's remarks and upon further review, the amended claims 1-29 are allowable over the art of record for reciting details of the branch storage, the storage of branch indication, the connections of the portion of instruction instance identifier to the first output and second output.
7. The response regarding claims 30-44 filed on 09/14/07 and the response on 05/07/07 have been fully considered but are not persuasive.
8. In the remarks, applicant argued that :
 - a) White specifically taught Branch Unit , and not the L1 cache stored target information used for perfecting target addresses;
 - b) White holds the target instruction that is executed based on the prediction by the branch unit as to what instruction should be executed next and fails to have any input on determining the direction of the branch or any branch qualifier. White makes it clear that it is the branch unit and not the L1 cache that makes the determination of the predicted path;
 - c) the branch prediction is based on information in the branch target cache , not information in the L1 cache.

9. As to a,b above, White's cache 204 and branch unit 250 (252) combined are a "branch prediction storage" because White taught the 204 cache in fig.6 b was the organization of an exemplary branch target cache as 4-way set associative, and the fig.6 c illustrated the entries in the branch target cache including for each entry the L1 cache entry index (the set number), byte location, and the way number for the cache line containing the target instruction in the L1 cache (see co1.6, lines 64-67, co1.7, lines 1-6). Therefore, the L1 cache 204 branch target cache and 252 branch target cache are a branch prediction storage. Further evidence also shows that the 204 L1 target cache and 252 target cache are interconnected by delicate buses (see co1.11, lines 36-43). Therefore, L1 204 and 252 had dedicated connection and worked together as one prediction storage unit. And, since it was directed to the prediction, it must have conveyed the direction of the branch or any branch qualifier, such as the prediction information.

10. As to c, although the branch prediction was based on information in the branch target cache, the branch target cache included for each entry the L1 cache entry index (the set number), byte location, and the way number for the cache line containing the target instruction in the L1 cache (see co1.6, lines 64-67, co1.7, lines 1-6), and they are interconnected by dedicated buses (see co1.11, lines 36-43). Therefore, L1 cache was an integral part of branch target cache. Arguing the L1 cache to be a separate part from the branch target cache is not in conformity of what is being taught by White, and it is certainly not a reasonable reading in view of the explicitly teachings of the way information for the L1 cache entry and the interconnected dedicated buses by White.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Art Unit: 2183

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dan Pan whose telephone number is 571 272 4172. The examiner can normally be reached on M-F from 8:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chan, can be reached on 571 272 4162. The fax phone number for the organization where this application or proceeding is assigned is 703 306 5404.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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